

What is claimed is:

1. A method for reducing autogenous shrinkage in ultra high-strength concrete in the blending of ultra high-strength concrete with a
5 compression strength in excess of 100 N/mm^2 , comprising the steps of:

replacing 30 vol.% or less of coarse aggregate with artificial lightweight aggregate, and

blending in a expansive additive in the amount of 30 kg/m^3 of concrete and/or a shrinkage reducing agent in the amount of 4 wt.% or less per
10 unit weight of binder, and thereby

bringing the amount of autogenous shrinkage at a curing age of 91 days to $0\text{--}600 \text{ }\mu\text{m/m}$.

2. The method for reducing autogenous shrinkage in ultra high-strength concrete according to claim 1, wherein the artificial lightweight
15 aggregate used has water absorption of 5% or greater and 20% or less, a collapse load of $1000\text{--}2000 \text{ N}$ and a bone-dry density of $1.4\text{--}2.0 \text{ g/cm}^3$.

3. The method for reducing autogenous shrinkage in ultra high-strength concrete according to claim 1 or claim 2, further comprising a step of
20 blending into the ultra high-strength concrete at least one of: a water reducing agent, a high-performance water reducing agent, an air-entraining and water reducing agent or a high-performance air-entraining and water-reducing agent according to JIS A 6204, "Chemical Admixtures for Concrete."

25

4. The method for reducing autogenous shrinkage in ultra high-strength concrete according to any of claims 1, 2 or 3, wherein the ratio of water to binder including cement (the water-binder ratio) is 10–25% and the amount of coarse aggregate is $0\text{--}400 \text{ L/m}^3$.

30